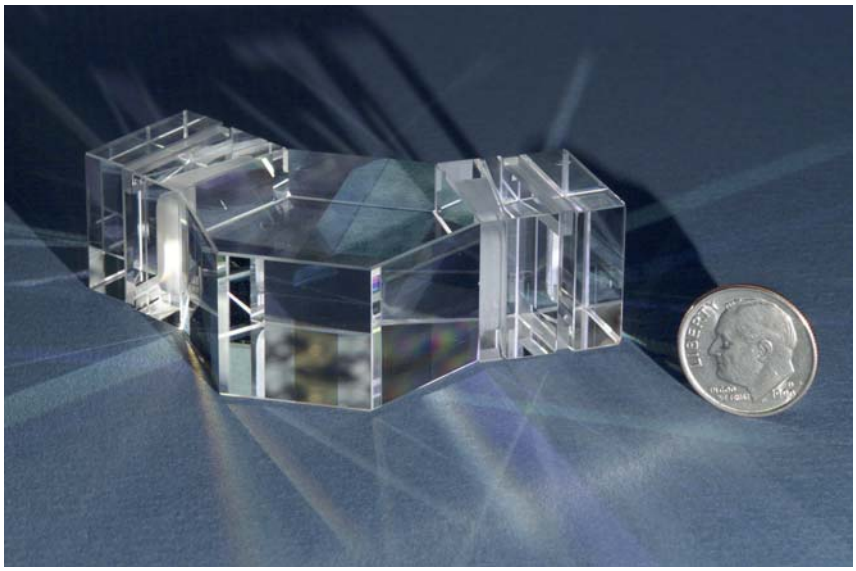
Spatial Heterodyne IMager for MEsospheric Radicals (SHIMMER)



First monolithic, optically contacted SHS interferometer

SHIMMER (Spatial Heterodyne IMager for MEsospheric Radicals) is a space borne UV spectrometer designed for the investigation of photochemistry and dynamics in the middle atmosphere. SHIMMER uses a new optical technique known as Spatial Heterodyne Spectroscopy (SHS) which is ideally suited for measurements that require high sensitivity and high spectral resolution over a narrow passband.

The hydroxyl radical (OH) has a pervasive influence on the photochemistry of the middle atmosphere, but measurements are extremely scarce in this altitude region. The observational concept of inferring OH vertical concentration profiles from measurements of OH solar resonance fluorescence near 308 nm was successfully demonstrated by MAHRSI during two space shuttle missions (STS-66 and STS-85). Using SHS technology rather than conventional techniques enables us to build smaller, lighter and more sensitive instruments for the detection of atmospheric OH from space. These instruments will allow us to make long term global measurements of OH and other mesospheric radicals from small satellites.

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